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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,414	06/13/2006	Roy Van Dijk	NL031451	6369

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EXAMINER

LEIBY, CHRISTOPHER E

ART UNIT	PAPER NUMBER
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2629

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12/31/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,414	Applicant(s) VAN DIJK, ROY	
	Examiner CHRISTOPHER E. LEIBY	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. **Claims 1-9** are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-4, 6-7, and 9** are rejected under 35 U.S.C. 102(b) as being anticipated by **Silverbrook et al.** (US Patent 5,805,136), herein after referred to as Silverbrook.

Regarding **independent claim 1**, Silverbrook discloses a display panel comprising a plurality of pixels (*figure 22*), each comprising a plurality of sub-pixel elements occupying respective continuous sub-pixel element areas within a pixel area (*figure 16 reference 55-61*), at least two non-adjacent sub-pixel elements (*figure 16 reference 57-59*) being coupled to receive substantially a same driving signal (*column 6 lines 39-53*).

Regarding **claim 2**, Silverbrook discloses a display panel, each of the pixels comprising sub-pixel members formed by either the at least two sub-pixel elements coupled to receive the same driving signal or a sub-pixel element coupled to receive a unique driving signal, respective sizes of areas occupied by

the respective sub-pixel members forming a series of increasing sizes (*figure 16 reference sub-pixels 55, 56, and 58 arranged in a series forming increasing sizes from 55 to 58*).

Regarding **claims 3 and 4**, Silverbrook discloses a display panel, the series having an ordinal x , a cumulative value of the sizes of the members with ordinal x or lower increasing according to a power law of the ordinal x ; the series having N members, the cumulative value of the sizes as a fraction of the cumulative value for $x=N$ increasing substantially with the ordinal x

as: $(x/N)^{\gamma}$, wherein γ is an exponent, with

$1 \leq \gamma \leq 4$ (*column 6 lines 39-53 disclose that the area of 55 is approximately 1 square unit and 56 is two square units and wherein 57-59 form together 8 square units, as seen in the figure area 58 comprises approximately half of the total 8 square unit area thereby being approximately 4 square units following a series increase relation ship through the powers of 2 being 1, 2, 4, etc. following the disclosed relationship of $(x/3)^2$*).

Regarding **claim 6**, Silverbrook discloses a display panel, the at least two non-adjacent sub-pixel elements being coupled via a conductor (*figure 16 reference conductor or drive line 53 connected to drive areas 57-59 as disclosed in column 6 lines 39-53*).

Regarding **claims 7 and 9**, Silverbrook discloses a display panel, the at least two non-adjacent sub-pixel elements being coupled to respective drivers receiving substantially a same input signal and a driver for providing driving signals to sub-pixel elements (*column 6 lines 39-53 wherein 4 drive lines drive their respective lines wherein for example drive line 53 drives areas 57-59 all with the same signal*).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Silverbrook** as applied to claim 1 above, in view of **Mathew et al.** (US Patent Application Publication 2006/0103643), herein after referred to as Mathew.

Regarding claim 5, Silverbrook discloses a display panel, the display panel being an LCD display panel (*column 7 lines 35-39*).

Silverbrook does not specifically state that the invention would be able to be used in an electromechanical display.

Mathew discloses a an interferometric modulator display (*paragraph [0016]*) which is a type of electromechanical device (*paragraph [0005]*) using a system of sub-pixels to display images varying in capacitance since the sub-pixels vary in sizes (*paragraph [0074]*).

It would have been obvious to one skilled in the art at the time of the invention to use Silverbrook's method of display in Mathew's electromechanical display device since electromechanical display device's have a wide range of applications and would benefit from the modification due to the utilization of such as disclosed by Mathew (*end of paragraph [0005]*).

6. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Silverbrook** as applied to claim 1 above, in view of **Hasse et al.** (US Patent 6,791,258), herein after referred to as Hasse, and further in view of **Brown Elliott** (US Patent 6,903,754), herein after referred to as Brown.

Regarding **claim 8**, Silverbrook discloses a display panel, each of the plurality of pixels comprising a first and a second sub-pixel for providing light of mutually differing brightness, parts of a display area occupied by sub-pixel elements belonging to the first sub-pixel being interspersed with parts of the display area occupied by sub-pixel elements belonging to the second sub-pixel (*figure 16*).

Silverbrook does not disclose colors for the transparent sub-pixels connected to respective drive lines as shown in figure 16.

Hasse discloses a definition of sub-pixel for color displays means an area of a pixel that can be addressed to emit light of a particular color in a multi-color display (*column 2 lines 38-40*).

Brown discloses in figure 1 that a display area occupied by sub-pixel elements belonging to a first sub-pixel being interspersed with parts of display area occupied by sub-pixel elements belonging to a second sub-pixel (*figure 1 reference red 14 in two locations interspersed by blue element 12 which also intersperses the green elements 16*).

It would have been obvious to one skilled in the art at the time of the invention that Silverbrook's driving lines, each connected to their respective sub-

pixels, were each to drive a signal related to a respective color as disclosed by Hasse in the arrangement as shown by Silverbrook figure 16 to enable Silverbrook's display to display color besides that of only grayscale.

The combination is further supported by evidence, disclosed by Brown, as what was known in the art at the time of the invention that a sub-pixels emitting a specific color could be interspersed between other sub-pixels emitting a different specific color.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hack et al. (US Patent 7,053,412) discloses sub-pixel

increasing/decreasing in area in powers of two (*figure 15*).

Green (US Patent 5,124,695) discloses multiple sub-pixel areas varying in size each being driven by a respective drive line (*figures 1 and 2*).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER E. LEIBY whose telephone number is (571)270-3142. The examiner can normally be reached on 9 - 5 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CL

December 23rd, 2008

/Richard Hjerpe/
Supervisory Patent Examiner, Art Unit 2629